(FILE 'HOME' ENTERED AT 09:27:45 ON 16 MAR 2000)

FILE 'MEDLINE, CANCERLIT, EMBASE, BIOSIS, CAPLUS' ENTERED AT 09:28:54 ON 16 MAR 2000

L1 8244 S POLYETHYLENIMINE OR PEI
L2 473131 S MW OR MOLECULAR WEIGHT
L3 2504290 S NUCLEIC OR DNA OR PLASMID OR VECTOR
L4 701595 S KD# OR KILODALTON# OR DA OR DALTON#
L5 468778 S VEHICLE OR CARRIER
L6 3428449 S LOW
L7 1880045 S TRANSFE? OR GENE THERAPY OR DELIVERY
L8 816 S L1 AND L3
L9 49 S L8 AND L2
L10 29 DUP REM L9 (20 DUPLICATES REMOVED)
L11 240 S L1 AND L2
L12 43 S L11 AND L4
L13 22 DUP REM L12 (21 DUPLICATES REMOVED)

L10 ANSWER 26 OF 29 MEDLINE DUPLICATE 11
AN 79124730 MEDLINE
DN 79124730
TI Purification and characterization of RNA polymerase II resistant to alpha-amanitin from the mushroom Agaricus bisporus.
AU Vaisius A C; Horgen P A
SO BIOCHEMISTRY, (1979 Mar 6) 18 (5) 795-803.
Journal code: A0G. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197907
AB The ***DNA*** -dependent RNA polymerases II or B (ribonucleosidetriphosphate:RNA nucleotidyltransferase, EC 2.7.7.6) from the mushroom Agaricus bisporus has been purified to apparent homogeneity. The purification procedures involve precipitation with ***polyethylenimine*** , selective elution of RNA polymerase II from the ***polyethylenimine*** precipitate, ammonium sulfate fractionation, DEAE-cellulose chromatography, CM-cellulose chromatography, and exclusion chromatography on Bio-Gel A-1.5M. With this procedure 11 mg of RNA polymerase II is recovered from 1.5 kg of mushroom tissue. RNA polymerase II from Agaricus bisporus has 12 subunits with the following molecular weights: 182,000, 140,000, 89,000, 69,000, 53,000, 41,000, 37,000, 31,000, 29,000, 25,000, 19,000, and 16,500. Purified RNA polymerase II from Agaricus bisporous was half-maximally inhibited by the mushroom toxin alpha-amanitin at a concentration of 6.5 microgram/mL (7 X 10(-6) M), which is 650-fold more resistant than mammalian RNA polymerases II. The apparent Ki for the alpha-amanitin-RNA polymerase complex was estimated to be 12 X 10(-6) M. The activity of purified RNA polymerase II from the mushroom was quite typical of other eukaryotic RNA polymerase II with regard to template preference, salt optima, and divalent metal cation optima.

L10 ANSWER 21 OF 29 MEDLINE DUPLICATE 9
AN 91103927 MEDLINE

DN 91103927
TI Precipitation of ***nucleic*** acids with poly(ethyleneimine).
AU Cordes R M; Sims W B; Glatz C E
CS Department of Chemical Engineering, Iowa State University, Ames 50011..
SO BIOTECHNOLOGY PROGRESS, (1990 Jul-Aug) 6 (4) 283-5.
Journal code: ALG. ISSN: 8756-7938.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS B
EM 199105
AB Removal of ***nucleic*** acids from cell extracts is a common early step in downstream processing for protein recovery. We report on the precipitation of ***nucleic*** acids from a homogenate of Saccharomyces cerevisiae by addition of the cationic polyelectrolyte poly(ethyleneimine) (***PEI***), focusing on the effect of ***PEI*** dosage on particle size, protein loss, and extent of ***nucleic*** acid removal in both batch and continuous mode. Better than 95% removal of ***nucleic*** acids from yeast homogenates was achieved by means of precipitation with ***PEI*** with protein losses of approximately 15% with or without previous removal of cell debris. The coprecipitated protein is predominately large ***molecular*** ***weight*** material and exhibits both low and high isoelectric points. Such treatment does not aggregate the cell debris; size distribution of the precipitated particles from a continuous precipitator is very similar to that for protein precipitation.

L10 ANSWER 13 OF 29 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1998:384409 BIOSIS
DN PREV199800384409
TI A low molecular ***polyethylenimine*** with striking qualities for gene delivery.
AU Bieber, Thorsten (1); Fischer, Dagmar; Kissel, Thomas; Elsaesser, Hans-Peter (1)
CS (1) Dep. Cell Biol., Robert-Koch-Str. 5, 35037 Marburg Germany
SO European Journal of Cell Biology, (1998) Vol. 75, No. SUPPL. 48, pp. 107. Meeting Info.: 22nd Annual Meeting of the Deutsche Gesellschaft fuer Zellbiologie (German Society for Cell Biology) Saarbruecken, Germany March 15-19, 1998 German Society for Cell Biology
. ISSN: 0171-9335.
DT Conference

L10 ANSWER 12 OF 29 CAPLUS COPYRIGHT 2000 ACS
AN 1998:481765 CAPLUS
DN 129:265246
TI Cationic low ***molecular*** ***weight*** polymers for gene transfer: cytotoxicity and transfection efficiency
AU Fischer, D.; Bieber, T.; Li, Y.; Elsasser, H. P.; Kissel, T.
CS Dept. of Pharmaceutics and Biopharmacy, Marburg, 35032, Germany
SO Proc. Int. Symp. Controlled Release Bioact. Mater. (1998), 25th, 211-212
CODEN: PCRMEY; ISSN: 1022-0178
PB Controlled Release Society, Inc.
DT Journal

LA English
AB LMW- ***PEI*** (low-mol.-wt. ***polyethylenimine***) is a new gene delivery ***vector*** with a favorable toxicity/efficiency profile compared to HMW- ***PEI*** . In contrast to HMW- ***PEI*** damaging membranes and intracellular elements, no significant cellular disturbance could be obsd. using LMW- ***PEI*** . High expression activities even in the presence of serum could be obtained by different cell lines. The amino groups of the PEIs are possible reactive sites for introducing targeting functions to the complexes. LMW- ***PEI*** is a hopeful new candidate for in vivo applications.

L10 ANSWER 9 OF 29 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.
AN 1999252198 EMBASE
TI Poly(ethylenimine) and its role in gene delivery.
AU Godbey W.T.; Wu K.K.; Mikos A.G.
CS A.G. Mikos, Department of Bioengineering, Rice University, P.O. Box 1892, Houston, TX 77251-1892, United States. mikos@rice.edu
SO Journal of Controlled Release, (1999) 60/2-3 (149-160).
Refs: 70
ISSN: 0168-3659 CODEN: JCREEC
PUI S 0168-3659(99)00090-5
CY Netherlands
DT Journal; General Review
FS 022 Human Genetics
029 Clinical Biochemistry
030 Pharmacology
037 Drug Literature Index
LA English
SL English
AB Since the first published examination of poly(ethylenimine) (***PEI***) as a gene delivery vehicle, there has been a flurry of research aimed at this polycation and its role in gene therapy. Here we will briefly review ***PEI*** chemistry and the characterization of ***PEI*** / ***DNA*** complexes used for gene delivery. Additionally, we will note various ***PEI*** transfection considerations and examine findings involving other polycationic gene delivery vehicles used with cellular targeting ligands. The current state of our knowledge regarding the mechanism of ***PEI*** / ***DNA*** transfection will also be discussed. Finally, we will survey toxicity issues related to ***PEI*** transfection. Copyright (C) 1999 Elsevier Science B.V.

L10 ANSWER 8 OF 29 EMBASE COPYRIGHT 2000 ELSEVIER SCI. B.V.DUPLICATE 3
AN 1999127379 EMBASE
TI Size matters: ***Molecular*** ***weight*** affects the efficiency of poly(ethylenimine) as a gene delivery vehicle.
AU Godbey W.T.; Wu K.K.; Mikos A.G.
CS A.G. Mikos, Department of Bioengineering, Rice University, 6100 Main Street, Houston, TX 77005-1892, United States. mikos@rice.edu
SO Journal of Biomedical Materials Research, (1999) 45/3 (268-275).
Refs: 18
ISSN: 0021-9304 CODEN: JBMRBG
CY United States
DT Journal; Article
FS 022 Human Genetics
027 Biophysics, Bioengineering and Medical Instrumentation

037 Drug Literature Index
039 Pharmacy
LA English
SL English
AB Poly(ethylenimine) (***PEI***) samples of various molecular weights and pHs were used to transfect endothelial cells to achieve levels of gene expression for comparison. PEIs with nominal molecular weights of 600, 1200, 1800, 10,000, and 70,000 Da were examined at pHs of 5.0, 6.0, 7.0, and 8.0, and the results were recorded in terms of transfection efficiencies at 24, 48, 68, 92, and 120 h post-transfection. Trials were performed on the human endothelial cell-derived cell line EA.hy 926. We found that, for the polymers tested, transfection efficiency increased as the ***molecular*** ***weight*** of ***PEI*** increased. Representative values of PEIs at pH 6 and ***molecular*** ***weight*** 70,000 produced average transfection efficiencies of 25.6 .+-. 7.9% (n = 8) at the greatest average expression levels, while ***PEI*** of ***molecular*** ***weight*** 10,000 yielded efficiencies of only 11.4 .+-. 1.7% (n = 6). Transfection efficiencies for ***molecular*** ***weight*** 1,800 ***PEI*** were essentially zero, and PEIs of lower molecular weights produced no transfection at all. In contrast, the pH of the ***PEI*** solutions had no discernible effect on transfection. Optimal expression of the green fluorescent protein reporter occurred between 2 and 3 days post- transfection. The amount of reporter expression also was noted, as determined by the brightness of fluorescing cells under UV. The data obtained demonstrate that the ***molecular*** ***weight*** of the ***PEI*** carrier has an effect on transfection efficiency while the pH of the ***PEI*** solutions prior to ***DNA*** complexation has no such effect.

L10 ANSWER 5 OF 29 MEDLINE DUPLICATE 1
AN 1999396107 MEDLINE
DN 99396107
TI A novel non-viral ***vector*** for ***DNA*** delivery based on low ***molecular*** ***weight*** , branched ***polyethylenimine*** : effect of ***molecular*** ***weight*** on transfection efficiency and cytotoxicity.
AU Fischer D; Bieber T; Li Y; Elsasser H P; Kissel T
CS Department of Pharmaceutics and Biopharmacy, University of Marburg, Philipps-University, Germany.
SO PHARMACEUTICAL RESEARCH, (1999 Aug) 16 (8) 1273-9.
Journal code: PHS. ISSN: 0724-8741.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200001
EW 20000104
AB PURPOSE: Low ***molecular*** ***weight*** branched ***polyethylenimine*** (LMW- ***PEI***) was synthesized and studied as a ***DNA*** carrier for gene delivery with regard to physico-chemical properties, cytotoxicity, and transfection efficiency. METHODS: The architecture of LMW- ***PEI*** , synthesized by acid catalyzed ring-opening polymerization of aziridine was characterized by size exclusion chromatography in combination with laser light scattering

and 13C-NMR-spectroscopy. In vitro cytotoxic effects were quantified by LDH and MTT assay and visualized by transmission electron microscopy. The potential for transgene expression was monitored in ECV304 cells using luciferase driven by a SV40 promotor as reporter gene system. RESULTS: LMW- ***PEI*** (***Mw*** 11'900 D) with a low degree of branching was synthesized as a ***DNA*** carrier for gene delivery. In contrast to high ***molecular*** ***weight*** polyethylenimines (HMW- ***PEI*** ; ***Mw*** 1'616'000 D), the polymer described here showed a different degree of branching and was less cytotoxic in a broad range of concentrations. As demonstrated by transmission electron microscopy the LMW- ***PEI*** formed only small aggregates which were efficiently taken up by different cells in the presence of serum, most likely by an endocytic pathway. LMW- ***PEI*** yielded transfection efficiencies measured via expression of the reporter gene luciferase which were up to two orders of magnitude higher than those obtained with HMW- ***PEI*** . The reporter gene expression was concentration dependent, but in contrast to lipofection independent of serum addition. CONCLUSIONS: The LMW- ***PEI*** described here is a new, highly efficient, and non-cytotoxic ***vector*** with a favorable efficiency/toxicity profile for gene therapeutic applications.

L13 ANSWER 15 OF 22 MEDLINE DUPLICATE 10
AN 92194609 MEDLINE
DN 92194609
TI Sugar-specific inhibitory effects of wheat germ agglutinin and phytohemagglutinin-E4 on histamine release induced by basic secretagogues from rat peritoneal mast cells and their possible action sites.
AU Suzuki-Nishimura T; Nagaya K; Matsuda K; Uchida M K; Aoki J; Umeda M; Inoue K
CS Department of Molecular Pharmacology, Meiji College of Pharmacy, Tokyo, Japan.
SO JAPANESE JOURNAL OF PHARMACOLOGY, (1991 Sep) 57 (1) 79-90. Journal code: KO7. ISSN: 0021-5198.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199206
AB The histamine release induced by compound 48/80, bradykinin or ***polyethylenimine*** with a ***molecular*** ***weight*** of 600 (PEI6) was inhibited by wheat germ agglutinin (WGA) and phytohemagglutinin E-subunits (PHA-E4), and the inhibition was specifically reversed by N-acetyl glucosamine and N-acetyl galactosamine, respectively. Concanavalin A (Con A) and phytohemagglutinin L-subunits (PHA-L4) did not inhibit the histamine release induced by compound 48/80, bradykinin or PEI6. The histamine release induced by substance P was also inhibited sugar-specifically by WGA and PHA-E4. The binding sites for compound 48/80, bradykinin, PEI6 and substance P, therefore, seemed to especially overlap each other. These binding sites were found to be glycoproteins having affinities to WGA and PHA-E4, but not to Con A and PHA-L4. The binding of WGA and PHA-E4 to the glycoproteins resulted in inhibition of the interaction between the basic secretagogues including bradykinin and substance P and their binding sites on the mast cells. The bindings of five lectins to mast cell glycoproteins were examined by lectin-blotting. Several glycoproteins, which had specific affinities to

WGA and PHA-E4, but not to Con A and PHA-L4 were detected. We assumed that the binding sites for basic secretagogues which are coupled with histamine-releasing mechanisms exist among these glycoproteins. A 41-***kDa*** protein (alpha-subunit of pertussis toxin-sensitive G protein) was not detected by WGA, suggesting that the binding sites for the basic secretagogues were not G proteins.